# ONKYO SERVICE MANUAL

## QUARTZ LOCKED DIRECT DRIVE AUTOMATIC TURNTABLE MODEL CP-1046F

**Silver and black models**

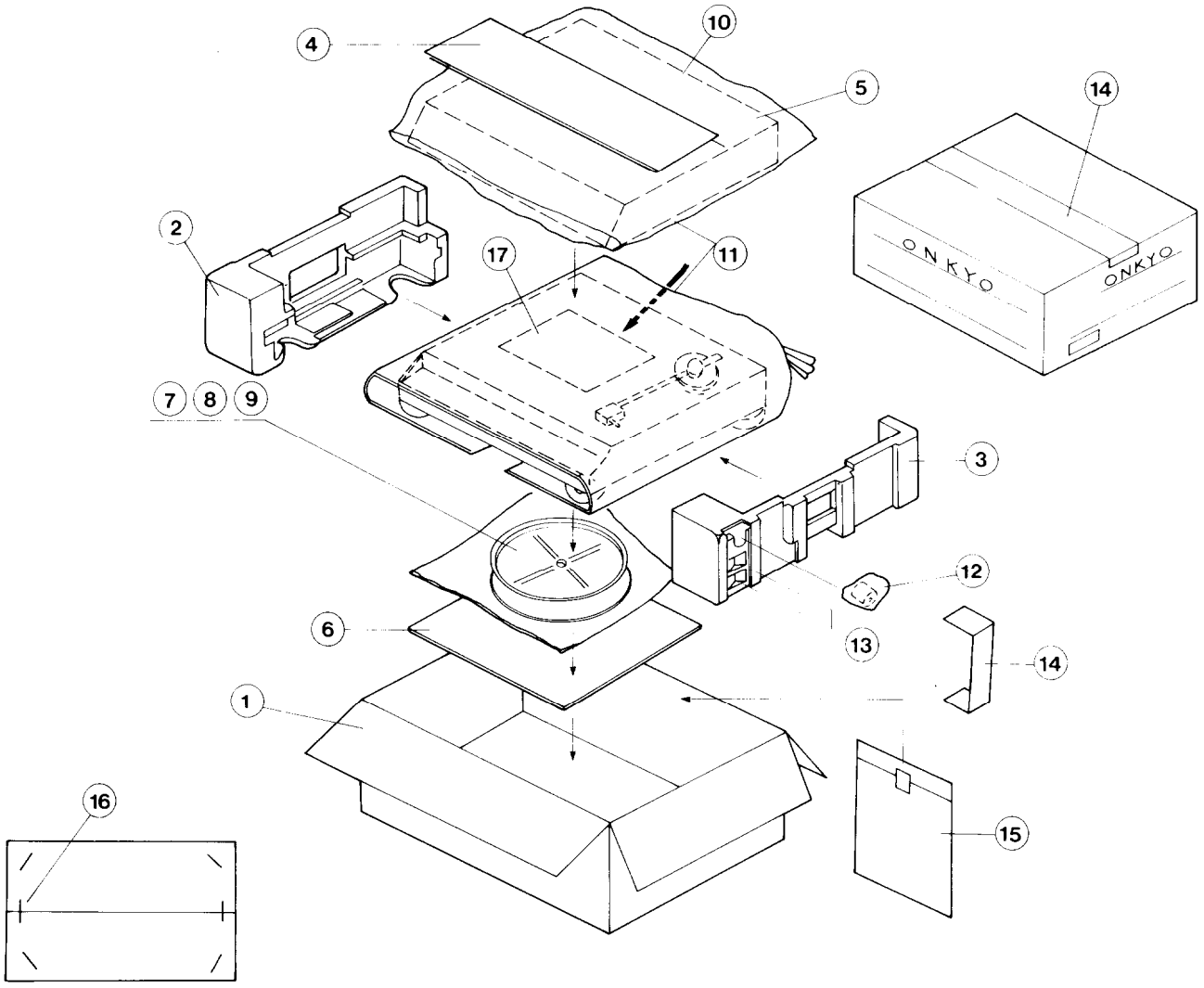
**Note.**
**For model CP-1046F, read CP-1044F as CP-1046F. But the following parts are not the same on models CP-1046F and CP-1044F.**

| PAGE | REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|---|
| 4 | | 24509320 | Dust cover |
| 4 | 34 | 24509327 | Insulator (J) |
| 4 | 31 | 24509325 | Insulator (H) |
| 4 | 32 | 24509326 | Insulator (I) |
| 4 | 44 | 28191249 | Clear plate |
| 4 | 45 | 27262267 | Plate 46 |
| 4 | 45 | 27262268 | Plate 46 (B) |
| 12 | 8 | 24509329 | T.T sheet (N) |
| 12 | 8 | 24509286 | T.T sheet (G) |
| 4 | 43 | 27267335 | Guide (L) (B) |
| 4 | 36 | 28321549 | Knob (S) (B) |
| 4 | 35 | 28321546 | Knob (R) ass'y (B) |
| | | 24505155 | PU-cable (N) |
| | | 24505158A | PU-cable (V) |
| 4 | 4 | 28110290 | Floating base ass'y (B) |
| 4 | 1 | 28110289 | Cabinet (B) |
| 4 | P304 | 242960 | OC-61VE, Cartridge (G) |
| 4 | P304 | 242959 | DN-61STE, Stylus (G) |
| | | 28180080 | Hinge (B) |

NOTE

N: Only 120V Model
G: Other Models
B: Black Model
V: West Germany Model

ONKYO
AUDIO COMPONENTS




| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | 29050939 | Master carton box (Black Model) |
| | 29050938 | Master carton box (Silver Model) |
| 2 | 29090916A | Pad (L) |
| 3 | 29090917A | Pad (R) |
| 4 | 29090918A | Sheet |
| 5 | 29095366 | Sheet |
| 6 | 29095286 | Sheet |
| 7 | 24502159 | Turntable platter |
| 8 | 24509328 | T. T. Sheet (N) |
| | 24509286A | T. T. Sheet (G) |
| 9 | 29100046 | 370 x 470, Poly-vinyl bag |
| 10 | 24501460 | Dust.cover |
| 11 | | Sheet |
| 12 | 24501460 | Counter weight |
| 13 | 28180080 | Hinge (Black Model) |
| 13 | 28180078 | Hinge (Silver Model) |
| 14 | | P. P. tape |
| 15 | Accessary bag complete | |
| | 29340775 | Instruction manual (N) |
| | 292049A | 45 rpm adaptor |
| | 24509197 | Overhang gauge |
| | 29358004 | Service station list (N) |
| | 29365006-6 | Warranty card (N) |
| | 29100005 | 220 x 330, Poly-vinyl bag |
| | 24501330 | Cartiridge attachment parts ass'y (G) |
| | 25055040 | C-V-K2, Conversion plug (G) |
| | 29340776 | Instruction manual (G) |
| 16 | 282301 | Sealing hook |
| 17 | 29355101 | Caution sheet |

NOTE
N: Only 120V Model
G: Other Models

# ONKYO SERVICE MANUAL

SERIAL NO. 3159

## QUARTZ LOCKED DIRECT DRIVE FULLY AUTOMATIC TURNTABLE MODEL CP-1044F

| | |
|---|---|
| UDN, UD | 120V AC, 60 Hz |
| UU | 110/120/220/240V AC, 50/60 Hz |

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLE INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

## SPECIFICATIONS

| | |
|---|---|
| Type: | Quartz locked direct drive fully automatic turntable with auto lead-in and return, reject, repeat, cue and search button functions, two-motor micro-computer design |
| Turntable Platter: | 310 mm (12-1/4") aluminum die-cast. |
| Motor: | Quartz loked direct drive brushelss DC motor |
| Speeds: | 33-1/3, 45 rpm |
| Wow & Flutter: | less than 0.025% (WRMS) |
| Signal-to-Noise Ratio: | better than 75dB (DIN B) |
| Tonearm: | Statically balanced straight type |
| Effective Arm Length: | 224 mm (8-7/8") |
| Overhang: | 13 mm (1/2") |
| Offset Angle: | 21 degrees |
| Maximum Tracking Error: | +3 degrees, −1.5 degrees |
| Suitable Cartridge Weight: | Min. 5, Max. 9 grams |
| Tracking Force: | 0 – 3.0 grams |
| Other Features: | Tracking force direct readout scale<br>Removable headshell<br>Anti-skating device |

ONKYO AUDIO COMPONENTS

| | |
|---|---|
| Dimensions (W x D x H) | 418 x 376 x 132 mm (16-1/2" x 14-13/16" x 5-1/5") |
| Weight: | 6.0 kg (13.2 lbs.) |
| Accessories: | Headsheell, counterweight, overhang gauge, adapter, instruction manual |

Optional Recommended Headshell: SH-21E

Specifications are subject to change for further product improvements.

# SERVICE PROCEDURES

**Insulation resistance measurement**

Connect the insulating-resistance tester between the plug of power supply cord and chassis.

Specifications; D model 500 V 3.3±0.33 MΩ
G/W models 500 V more than 10 MΩ

# ADJUSTMENT PROCEDURES

1. **Return sensitivity adjustment (fig. 1)**
   Turn the unit upside-down and, with the DD motor and arm motor connector removed, connect a DC voltmeter between TP and GND. Move the arm to the inside of the platter, put the return sensor in the release position and shut out extraneous light. Starting with the semi-fixed resistor R703 set all the way to the left, begin to rotate the resistor clockwise to the point where the voltage between TP and GND rises 2mV above low (a few hundred mV).

2. **Platter height adjustment (fig. 2)**
   Return the unit to the upright position and rotate the float base height adjustment screw. Adjust so that the platter height is 13mm ± 2mm above the cabinet.

3. **Stylus height adjustment**
   Set the tonearm in the up position and adjust the lifter plate screw so the height of the stylus tip is 8mm ± 1mm above the platter mat.
   Note 1: The height should be 11mm ± 2mm measured from the surface of the platter.
   Note 2: Rotate the lifter plate screw counterclockwise to lower the stylus height and clockwise to raise the stylus height.

4. **Lead-in count adjustment (Tracking force: 2 grams Anti-skating force: 2 grams Speed: 45 rpm)**
   Using test record ONK-1000, adjust so the lead-in count is 10-20 counts for both 30cm and 17cm records. Adjust using the PU pulley shutter and NCDG-1731 printed circuit board jumper lead.
   The count changes in the following manner as the jumper leads are cut:

| | |
|---|---|
| Jumper lead A | 3 count changes |
| Jumper lead B | 6 count changes |
| Jumper lead C | 12 count chnages |
| Jumper lead ± | cut: − . connect: + |

5. **Return count adjustment (Speed: 45 rpm)**
   Using test record ONK-1000, adjust so the 3mm pitch return count is 24-26 counts. Adjust using the PU pulley eccentricity pin. Confirm that the tonearm does not return until 22 counts at a pitch of 1mm.

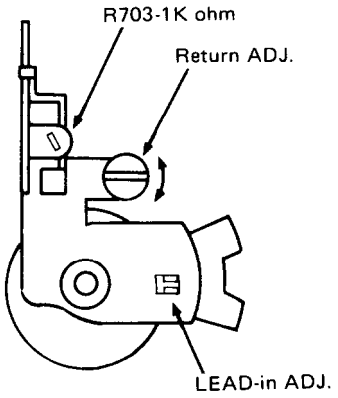



fig. 1

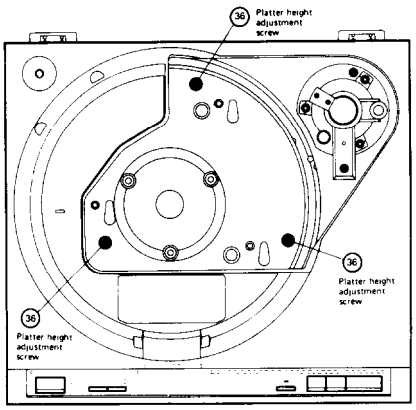
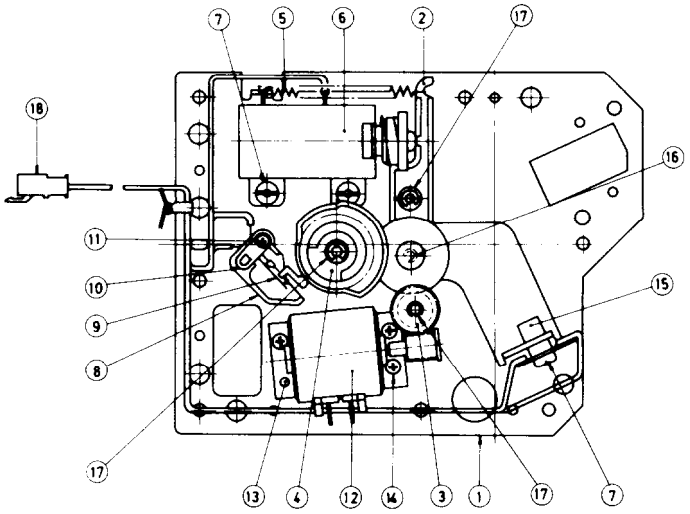



fig. 2

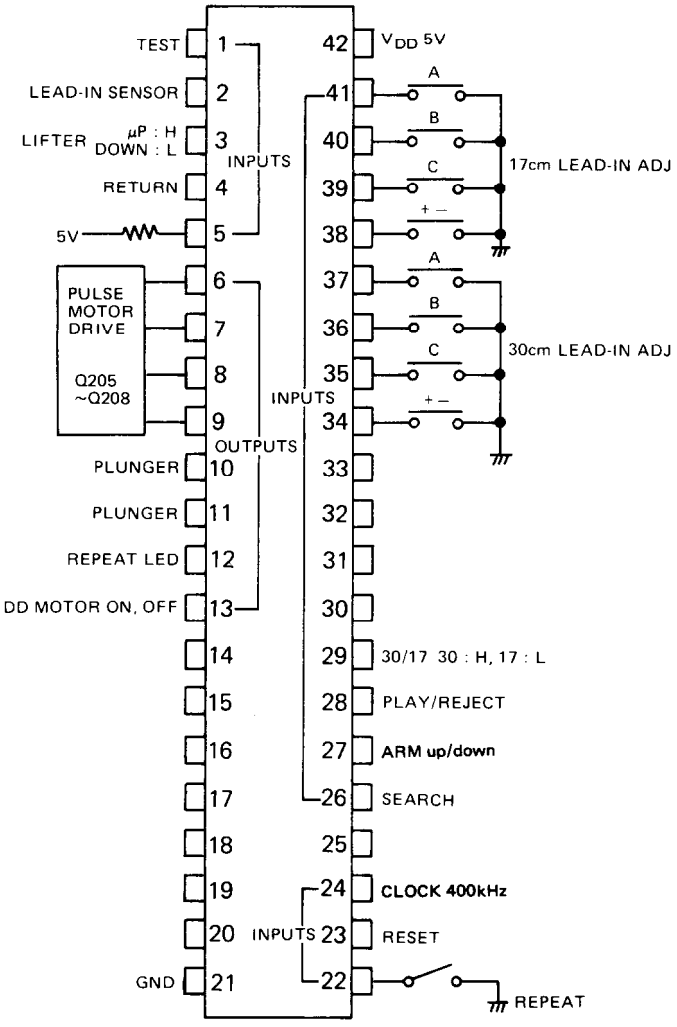
# MECHANISM COMPONENT LOCATION



| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 1 | 24506644 | Chassis |
| 2 | 24504310 | Lever |
| 3 | 24503097 | Wheel |
| 4 | 24503098 | Cam wheel |
| 5 | 24503100 | Tension spring |
| 6 | 24506474 | Solenoid |
| 7 | 24506437 | Screw |
| 8 | 24506463 | Cover |
| 9 | 24503102 | Switch |
| 10 | 24509234 | Spacer |
| 11 | 82112024 | 2P-24FN, Pan head screw |
| 12 | 24502125B | Motor ass'y |
| 13 | 24506464 | Rubber plate |
| 14 | 82142306 | 2.3P + 6FN (BC), Pan head screw |
| 15 | 24506596 | Photo diode/transistor ass'y |
| 16 | 893030 | E-3, Circlip |
| 17 | 893020 | E-2, Circlip |
| 18 | 2000241 | NSAS-8P179, Socket |
| 19 | | Belt |
| 20 | | Label |
| 21 | 24506658 | Screw |
| 22 | 24506659 | Toothed washer |
| 23 | 24506461 | Rubber ring |

# MICROCOMPUTER

## TMP4315AP (1031)



# COMPONENT LOCATION PARTS LIST

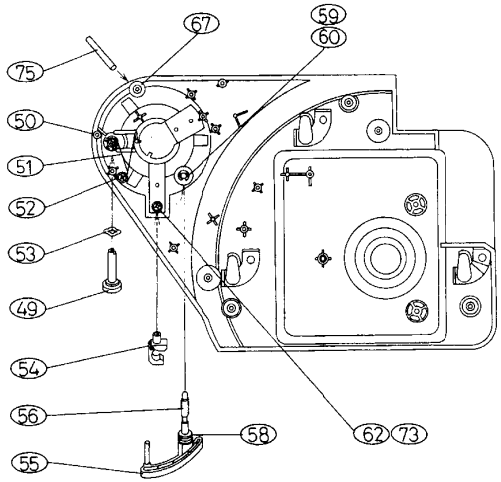
| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 1 | 28110274 | Cabinet |
| 4 | 28110275A | Floating base ass'y |
| 9 | 24509279 | Dust cover |
| 11 | 28180078 | Hinge |
| 13 | 28153076 | Bottom board |
| 17 | 24502159 | Turntable platter |
| 19 | 27140866 | Bracket B |
| 20 | 27140393 | Bracket AC |
| 22 | 27150126 | Shielded plate |
| 25 | 27140856 | Bracket A |
| 26 | 28140209 | Cushion |
| 27 | 28140496 | Cushion |
| 29 | 28140507 | Cushion |
| 31 | 24509313 | Insulator G |
| 32 | 24509312 | Insulator F |
| 33 | 24509314 | Insulator Y |
| 34 | 24509289 | Insulator E |
| 35 | 28321222 | Knob R |
| 36 | 28321221 | Knob S |
| 37 | 28321193 | Knob L |
| 38 | 27260119A | Shaft. power |
| 39 | 27140749A | Bracket, power |
| 40 | 27260120A | Shaft S |
| 42 | 8930301S | ES-3, Circlip |
| 43 | 27267289 | Guide L |
| 44 | 28191196A | Clear plate |
| 45 | 27262234A | Plate 44 |
| 46 | 28198596 | Facet |
| 47 | 28133078 | Back plate A |
| 48 | 28133079 | Back plate B |
| 49 | 28321163-1 | Knob IFC |
| 50 | 28400012A | Cam IFC |
| 51 | 27180175A | Spring IFC |
| 52 | 27267271 | Guide IFC |
| 53 | 870071 | WW-6, Wave washer |
| 54 | 24506645 | Tonearm rest ass'y |
| 55 | 24506648 | Lifter plate |
| 56 | 27260121A | Lifter shaft |
| 57 | 27180156 | Spring |
| 58 | 27180140-1 | Spring |
| 59 | 8930301S | ES-3S, Circlip |
| 60 | 87644012 | W4x12, Washer |
| 61 | 831430120 | 3TTW + 12P (BC), Tapping screw |
| 62 | 831430100 | 3TTW + 10P (BC), Tapping screw |
| 63 | 834440120 | 4TTP + 12P (BC), Tapping screw |
| 64 | 834440200 | 4TTP + 20P (BC), Tapping screw |
| 66 | 834430108 | 3TTS + 10B (BC), Tapping screw |
| 67 | 82544020 | 4B + 20FN (BC), Screw |
| 68 | 801275 | Special screw |
| 69 | 82144016 | 4P + 16FN (BC), Pan head screw |
| 70 | 87644012 | W4x12F (BC), Washer |
| 71 | 8761401816 | W4x12F (BC), Washer |
| 72 | 27270155 | Spacer |
| 73 | 87313006 | M-3B, Toothed washer |
| 74 | 876430100 | W3x10F (BC), Washer |
| 75 | 27265083 | 4x5. 3x14, Ring |
| 76 | 870060 | W3x15, Washer |

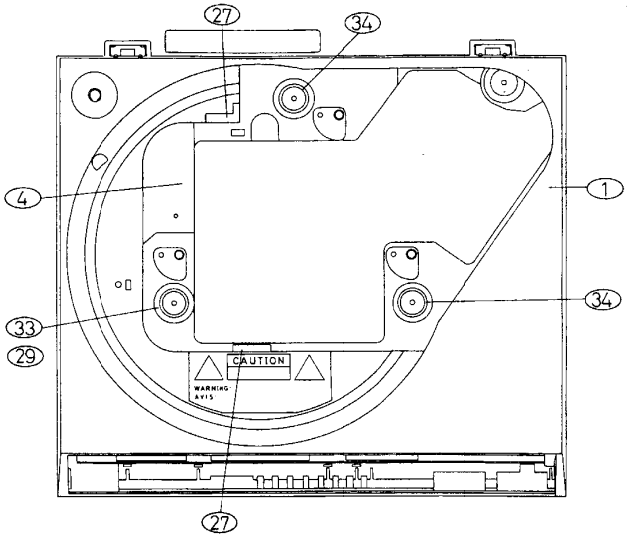
| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| M001 | 24502155A | 787V, Motor ass'y |
| P001 | 25050045 | NSCT-7P14, DIN terminal |
| P301 | 24506642 | N-35, Fully automatic mechanism ass'y |
| P302 | 24501457 | Tone arm ass'y |
| | 24501459 | Attachment screw |
| | 24501460 | Counter weight |
| | 24501325 | Headsheell |
| P303 | 24501330 | Attachment part ass'y, cartridge (D) |
| | 24501138 | 2.6x11, Screw |
| | 24501123 | 2.6x4, Nut |
| | 24506079 | Washer |
| P304 | 24501456 | Cartridge ass'y (U) |
| | 242953 | OC-61V, Cartridge |
| | 242954 | DN-61ST, Stylus |
| | 24501138 | Screw |
| | 24500079 | Washer |
| | 24501123 | Nut |
| P901 | 253099B | AS-UC-3, Power supply cable (D) |
| | 253083 | AS-CEE, Power supply cable (U) |
| P901a | 270025 | SR-3P-4, Strainrelief (D) |
| | 270280 | SR-4K-4, Strainrelief (U) |
| P902 | 200250 | NSAS-5P188, Socket |
| ⚠ PT101 | 230734 | NPT-816D, Power transformer (D) |
| | 230735 | NPT-816ADGQ, Power transformer (U) |
| ⚠ SW101 | 25035385 | NPS-111-L349, Power switch (D) |
| | 25035386 | NPS-111-L350P, Power switch (D) |
| ⚠ S002 | 25065168 | HXW0131-01-060, Voltage selector switch (U) |
| U1 | 10108531 | NADG-1731, Power supply and mechanism control pc board ass'y |
| U2 | 10128584 | NAPS-1684, Power supply terminal pc board ass'y |
| U3 | 10108532 | NASW-1732, Play switch pc board ass'y |
| U4 | 10108533 | NALED-1733, Repeat indicator pc board ass'y |
| U5 | 10101834 | NASW-1734, Size/speed indicator pc board ass'y |
| U6 | 10108535 | NALED-1735, Size/speed indicator pc board ass'y |
| U7 | 16627510 | NAPI-1010, Output cable terminal pc board ass'y |
| U8 | 10128517B | NARET-917b, Retern detection pc board ass'y |

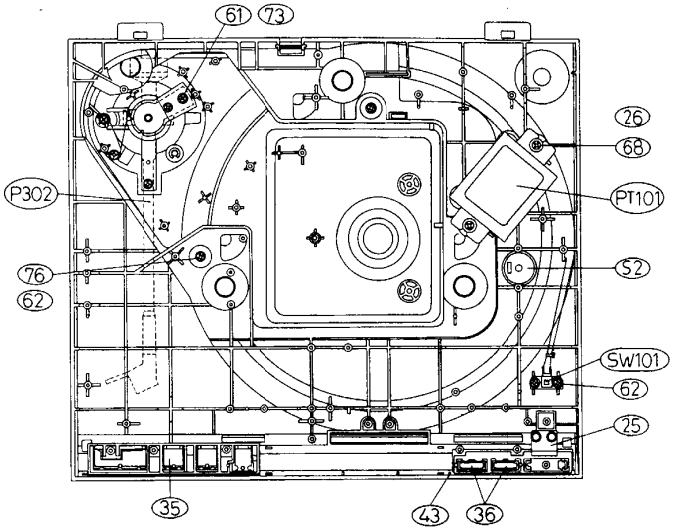
Note: (D): Only 120V model
(U): Only Universal model

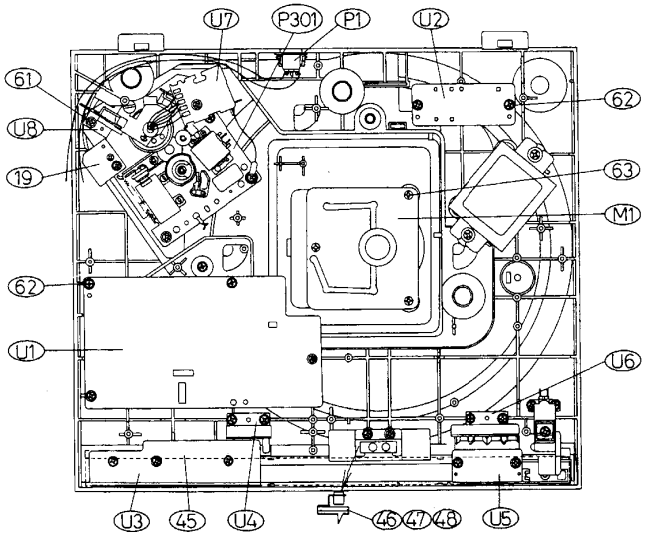
NOTE : THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR LISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

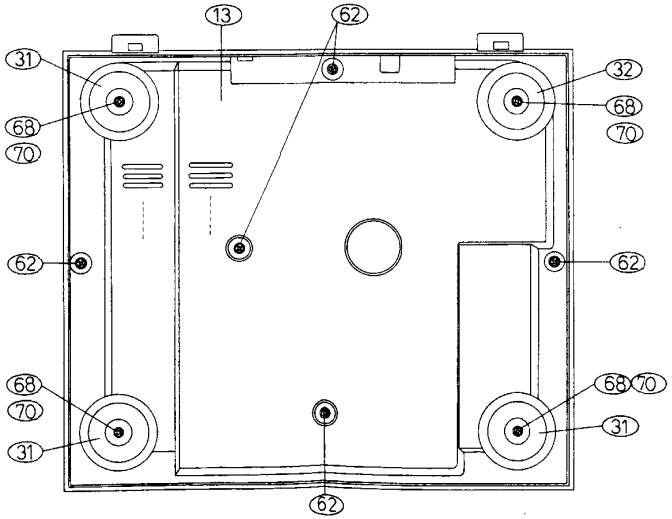
## COMPONENT LOCATION

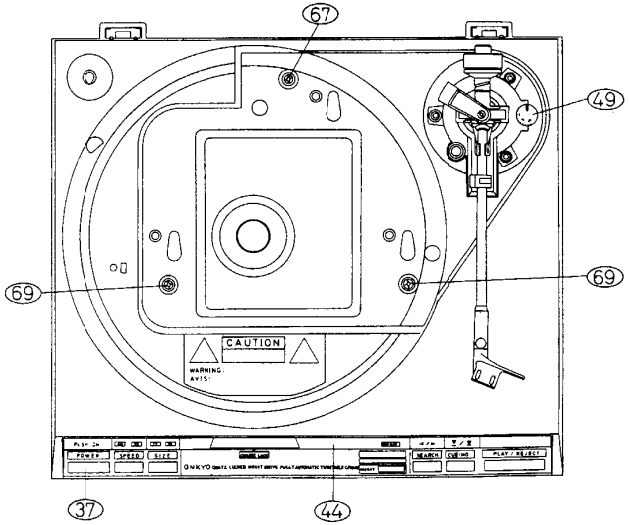


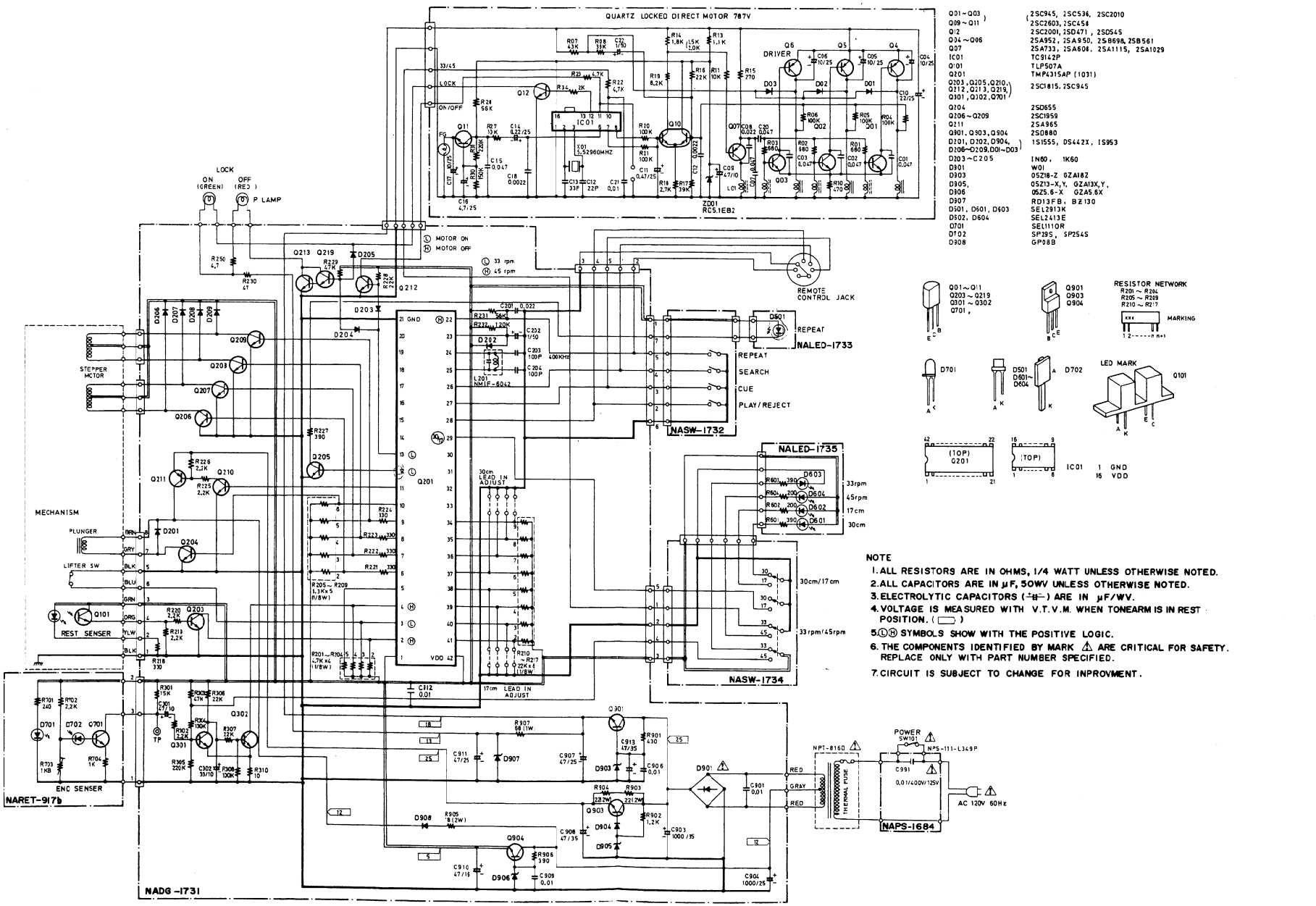



# SCHEMATIC DIAGRAM




| | |
|---|---|
| Q01 ~ Q03 | 2SC945, 2SC536, 2SC2010 |
| Q09 ~ Q11 | 2SC2603, 2SC458 |
| Q12 | 2SC2001, 2SD471, 2SD545 |
| Q04 ~ Q06 | 2SA952, 2SA950, 2SB698, 2SB561 |
| Q07 | 2SA733, 2SA606, 2SA1115, 2SA1029 |
| IC01 | TC9142P |
| Q101 | TLP507A |
| Q201 | TMP4315AP (1031) |
| Q203, Q205, Q210, Q212, Q213, Q219, Q301, Q302, Q701 | 2SC1815, 2SC945 |
| Q204 | 2SD655 |
| Q206 ~ Q209 | 2SC1959 |
| Q211 | 2SA965 |
| Q901, Q903, Q904 | 2SD880 |
| D201, D202, D904, D206~D209, D01~D03 | 1S1555, DS442X, 1S953 |
| D203 ~ C205 | IN60, 1K60 |
| D301 | W01 |
| D303 | 05Z18-Z GZA18Z |
| D305, D306 | 05Z13-X, Y, GZA13X, Y, 05Z5.6-X GZA5.6X |
| D307 | RD13FB, BZ130 |
| D501, D601, D603 | SEL2913K |
| D502, D604 | SEL2413E |
| D701 | SEL1110R |
| D702 | SP395, SP254S |
| D908 | GP08B |

Q01~Q11 Q203~Q219 Q301~Q302 Q701

Q901 Q903 Q904

D701 D501 D601~D604 D702

Q101

NOTE

1. ALL RESISTORS ARE IN OHMS, 1/4 WATT UNLESS OTHERWISE NOTED.
2. ALL CAPACITORS ARE IN μF, 50WV UNLESS OTHERWISE NOTED.
3. ELECTROLYTIC CAPACITORS (+ −) ARE IN μF/WV.
4. VOLTAGE IS MEASURED WITH V.T.V.M. WHEN TONEARM IS IN REST POSITION. ( )
5. (L)(H) SYMBOLS SHOW WITH THE POSITIVE LOGIC.
6. THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
7. CIRCUIT IS SUBJECT TO CHANGE FOR INPROVMENT.

# PRINTED CIRCUIT BOARD-PARTS LIST

## POWER SUPPLY AND MECHANISM CONTROL PC BOARD (NADG-1731)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | IC | |
| Q201 | 222677 | TMP4315AP (1031) |
| | Transistors | |
| Q203, Q205 | 2211253, | 2SC1815 (O), |
| Q210, Q212 | 2211254, | 2SC1815 (Y), |
| Q213 | 2211255, | 2SC1815 (GR), |
| | 2210746, | 2SC945A (P), |
| | 2210747 or | 2SC945A (Q) or |
| | 2210748 | 2SC945A (K) |
| Q204 | 2211706 | 2SD655 (F) |
| Q206-Q209 | 2211544 | 2SC1959 (Y) |
| Q211 | 2211644 | 2SA965 (Y) |
| Q301, Q302 | 2211254 or | 2SC1815 (Y) or |
| | 2211255 | 2SC1815 (GR) |
| Q901, Q903 | 2201074 | 2SD880 (Y) |
| Q904 | 2201074 | 2SD880 (Y) |
| | Diodes | |
| D201, D202 | 223145, | 1S2076TD, |
| D206, D209 | 223150, | VS1040, |
| D904 | 223105 or | 1S1555 or |
| | 223133 | DS442X |
| D203, D205 | 223103 or | 1N60 or |
| | 223132 | 1K60 |
| D901 | 223869 | W01 |
| D903 | 224200 or | D57Z18-Z or |
| | 2244193 | GZA18Z |
| D905 | 224190 or | D5Z13Y or |
| | 2241132 | GZA18Z |
| D906 | 224162 or | D5Z5.6X or |
| | 2240951 | GZA5.6X |
| D908 | 223848 | GP08B |
| D907 | 223929, | BZ130, |
| | 2239972 or | RD13FB2 or |
| | 2239973 | RD13FB3 |
| | Transformer | |
| L201 | 232108 | NMIF-6042 |
| | Capacitors | |
| C202 | 357280109 | 1μF, 50V, Elect. |
| C301 | 352734709 | 47μF, 10V, Elect. |
| C302 | 352733309 | 33μF, 10V, Elect. |
| C903 | 352761029 | 1,000μF, 35V, Elect. |
| C904 | 352751029 | 1,000μF, 25V, Elect. |
| C907 | 352754709 | 47μF, 25V, Elect. |
| C908 | 352764709 | 47μF, 35V, Elect. |
| C910 | 352744709 | 47μF, 16V, Elect. |
| C911 | 352754709 | 47μF, 25V, Elect. |
| | Resistors | |
| R201-R204 | 49121472504 | 4.7kohmx4, 1/8W, Network |
| R205-R209 | 49121332505 | 3.3kohmx4, 1/8W, Network |
| R210-R217 | 49121223508 | 22kohmx8, 1/8W, Network |
| R903, R904 | 44172204 | 22ohm, 1/2W, Metal oxide film |
| R905 | 441721804 | 18ohm, 2W, Metal oxide film |
| R907 | 441626804 | 68ohm, 1W, Metal oxide film |
| | Sokets | |
| | 2000239 | NSAS-5P177 |
| | 2000236 | NSAS-3P174 |
| | 2000237 | NSAS-3P175 |

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | Plugs | |
| | 25055089 | NPLG-3P73 |
| | 25055091 | NPLG-5P75 |
| | 25055093 | NPLG-7P77 |
| | 55055094 | NPLG-8P78 |
| | Radiators | |
| | 27160029 | RAD07 |
| | Lamps | |
| | 210175 | 14V. 0.06A |
| | Bracket | |
| | 27140790 | |

## PLAY SWITCH PC BOARD (NASW-1732)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | 25035291 | NPS-111-S257, Push switches |
| | 2000240 | NSAS-7P178, Socket |

## REPEAT INDICATOR PC BOARD (NALED-1733)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| D501 | 225142 | SEL2913K, LED |
| | 27250062 | Lamp case |
| | 27140795 | Bracket U |
| | 8334330080 | 3TTP +8P (BC), Tapping screw |

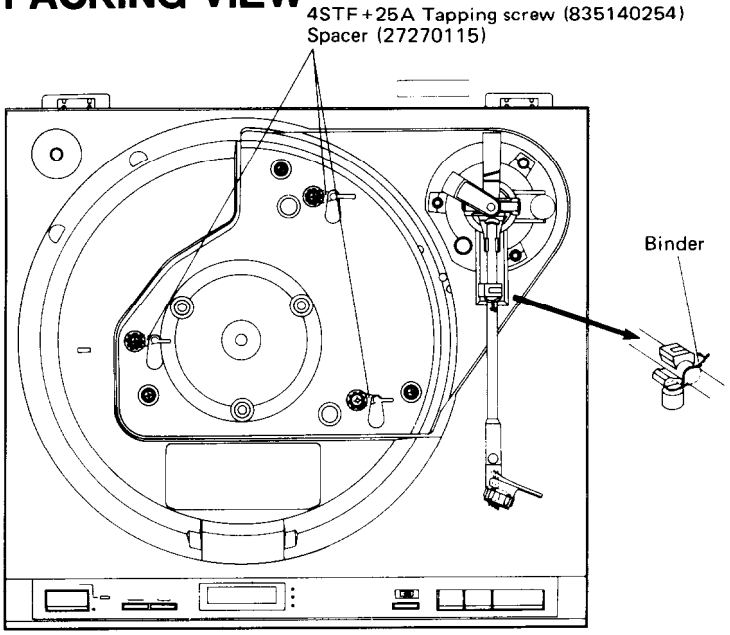
## SIZE/SPEED SWITCH PC BOARD (NASW-1734)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | 25035399 | NPS-122-L364, Push switch |
| | 2000249 | NSAS-5P178, Socket |

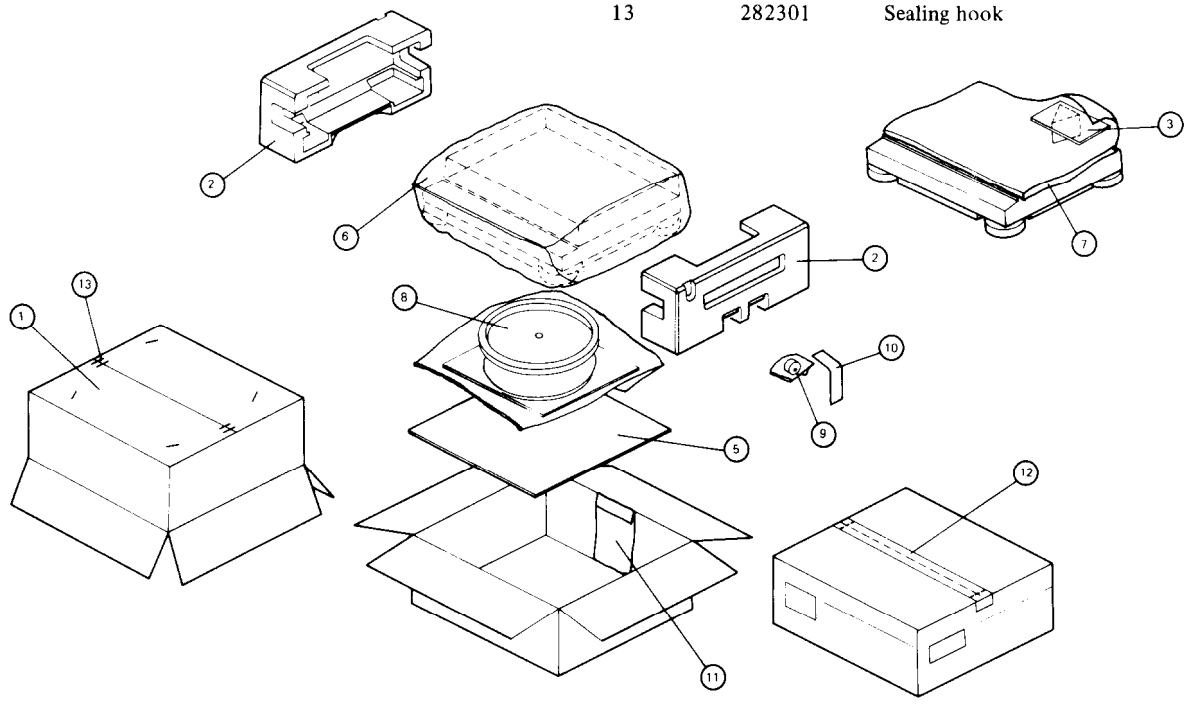
## SIZE/SPEED INDICATOR PC BOARD (NALED-1735)

| CIRCUIT NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| D601, D603 | 225142 | SEL2913K, LED |
| D602, D604 | 225137 | SEL2413E, LED |
| | 27250061 | Lamp case |
| | 27140795 | Bracket U |
| | 833430080 | 3TTP + 8P (BC), Tapping screw |

# PACKING VIEW




| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 1 | 29050778 | Master carton box |
| 2 | 29090791 | Pad |
| 3 | 29090837 | Pad, tonearm |
| 5 | 29095286 | Pad sheet |
| 6 | 29100049 | 640 x 620m/m, Poly-vinyl bag |
| 7 | 29095295 | Sheet |
| 8 | 24502159 | Turntable platter |
| | 24509286 | T.T. sheet |
| | 29100046 | 370x470mm, Poly-vinyl bag |
| 9 | 24501460 | Counter weight |
| | 29100002A | 80x150mm, Poly-vinyl bag |
| 10 | 260013 | P.P tape |
| 11 | Accessary bag complete | |
| | **120V model** | |
| | 29340704 | Instruction manual |
| | 292049A | 45rpm adaptor |
| | 24509197 | Overhang gauge |
| | 24501330 | Cartiridge attachment parts ass'y |
| | 29358002 | Service station list (Only USA model) |
| | 29365006-5 | Warranty card (Only USA model) |
| | 29100005 | 220x330mm, Poly-vinyl bag |
| | **120/220V model** | |
| | 29340705 | Instruction manual |
| | 292049A | 45rpm adaptor |
| | 29509197 | Overhang gauge |
| | 25055040 | C-V-K2, Conversion plug |
| | 29100005 | 220x330mm, Poly-vinyl bag |
| 12 | 260012 | W550mm, Damplon tape |
| 13 | 282301 | Sealing hook |




**ONKYO CORPORATION**
International Division: No. 24 Mori Bldg., 23-5, 3-chome, Nishi-Shinbashi, Minato-ku, Tokyo, Japan
Telex: 2423551 ONKYO J. Phone: 03-432-6981
**ONKYO U.S.A. CORPORATION**
200 Williams Drive, Ramsey, N.J. 07446 Tel. 201-825-7950
**ONKYO DENTSCHLAND GMBH, ELECTRONICS**
8034 München-Germering, Industriestrasse 18, West Germany. Telex: 521726 Telefon: (089)-84-3071

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